

assessing executive dysfunction, considered to be a common cognitive feature of traumatic encephalopathy syndrome, as designated by the recent diagnostic criteria. Further research should investigate the social and structural determinants contributing to racial disparities in long-term health outcomes within former NFL players.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Adult)

Keyword 1: traumatic brain injury

Keyword 2: cardiovascular disease

Keyword 3: aging (normal)

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3 Factors Associated with Acute Neurobehavioral Outcomes in Suspected Abusive Head Trauma

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Objective:

Abusive head trauma (AHT) is a form of inflicted brain injury that is associated with significant neurological impairment. Given that injuries occur during infancy, cognitive deficits may not become fully apparent for years. It is useful to understand injury factors related to outcomes. A recent study by Eismann et al. (2020) used length of PICU stay as a measure of injury severity and found that it is predictive of short-term and long-term outcomes in AHT. The current study aimed to examine injury severity factors related to acute outcomes (<3 months since injury) within a population of infants admitted to an inpatient rehabilitation unit (IRU).

Participants and Methods: The sample consisted of 45 infants (32 male, 13 female) hospitalized with suspected AHT. Age at injury was 0-21 months (MED= 4.89 months, SD = 5.48). The majority of patients (93%) had moderate to severe injury based on length of PICU stay (4+ days) [3]. Patients were administered the Mullen Scales of Early Learning (MSEL) during IRU admission, within 3 months of injury (range: 13-68 days; MED: 31 days). Pearson bivariate correlations were used to examine the relationship between MSEL

subscales (ELC: Early Learning Composite; VR: Visual Reception; RL: Receptive Language; EL: Expressive Language; FM: Fine Motor; GM: Gross Motor) and the following factors: days since injury and hospitalization time (days in PICU, PICU/General Pediatrics, IRU, total hospitalization). *P*-values less than .05 were considered significant.

Results: Scores on the MSEL Early Learning Composite ranged from exceptionally low to high average (Standard Score Range: <49-111; MED: 82; SD = 18.79). Unlike prior studies, time in PICU and time in PICU/General Pediatrics were not associated with any MSEL subscales. MSEL was moderately correlated with days in IRU (ELC: $r = -.44$; VR: $r = -.37$; RL: $r = -.32$; EL: $r = -.36$; GM: $r = -.29$) and total hospitalization time (ELC: $r = -.46$; VR: $r = -.42$; RL: $r = -.36$; EL: $r = -.37$; GM: $r = -.31$), such that longer hospitalization was associated with lower scores. Greater days since injury was also associated with lower MSEL scores (ELC: $r = -.45$; VR: $r = -.42$; RL: $r = -.40$; EL: $r = -.36$; FM: $r = -.33$; GM: $r = -.35$).

Conclusions: These results suggest that within an inpatient rehabilitation setting, longer total hospitalization time (including time on IRU) is moderately associated with worse acute neurobehavioral outcomes. While length of PICU stay has been associated with short-term outcomes in the outpatient setting (Eismann et al., 2020), this was not found in the current inpatient sample which had more severe injuries (longer PICU stay, inpatient rehabilitation admission). Interestingly, children assessed further out from injury had worse scores on the MSEL, which has previously been noted. Though this seems counterintuitive, it may reflect that participants with more severe injuries had a longer delay before they were capable of engaging in a neurodevelopmental assessment. These findings have implications for prognosticating early outcomes of AHT in an inpatient rehabilitation setting.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Child)

Keyword 1: child brain injury

Keyword 2: neuropsychological assessment

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